Fig.1

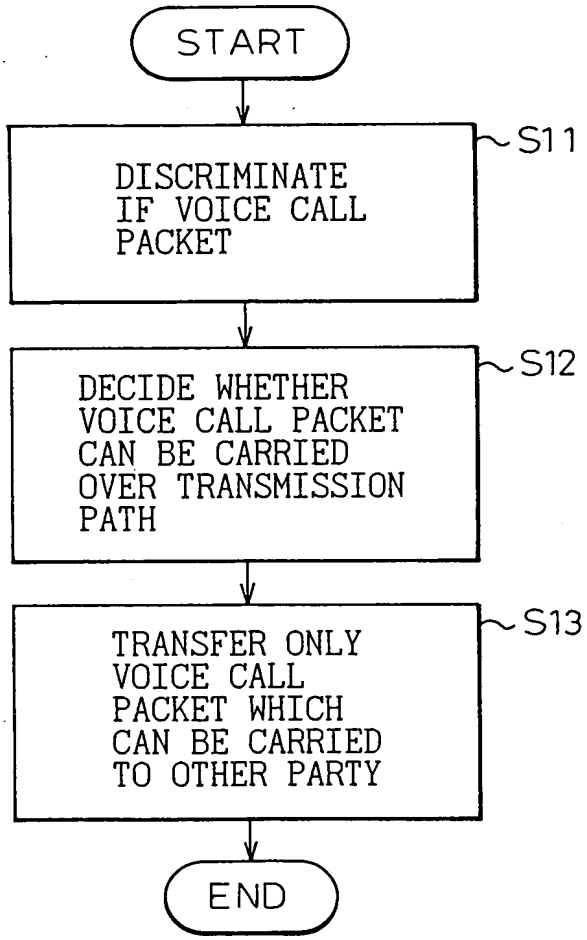

START
DISCRIMINATE IF VOICE CALL PACKET
S11
DECIDE WHETHER VOICE CALL PACKET CAN BE CARRIED OVER TRANSMISSION PATH
S12
TRANSFER ONLY VOICE CALL PACKET WHICH CAN BE CARRIED TO OTHER PARTY
S13
END

Fig.2

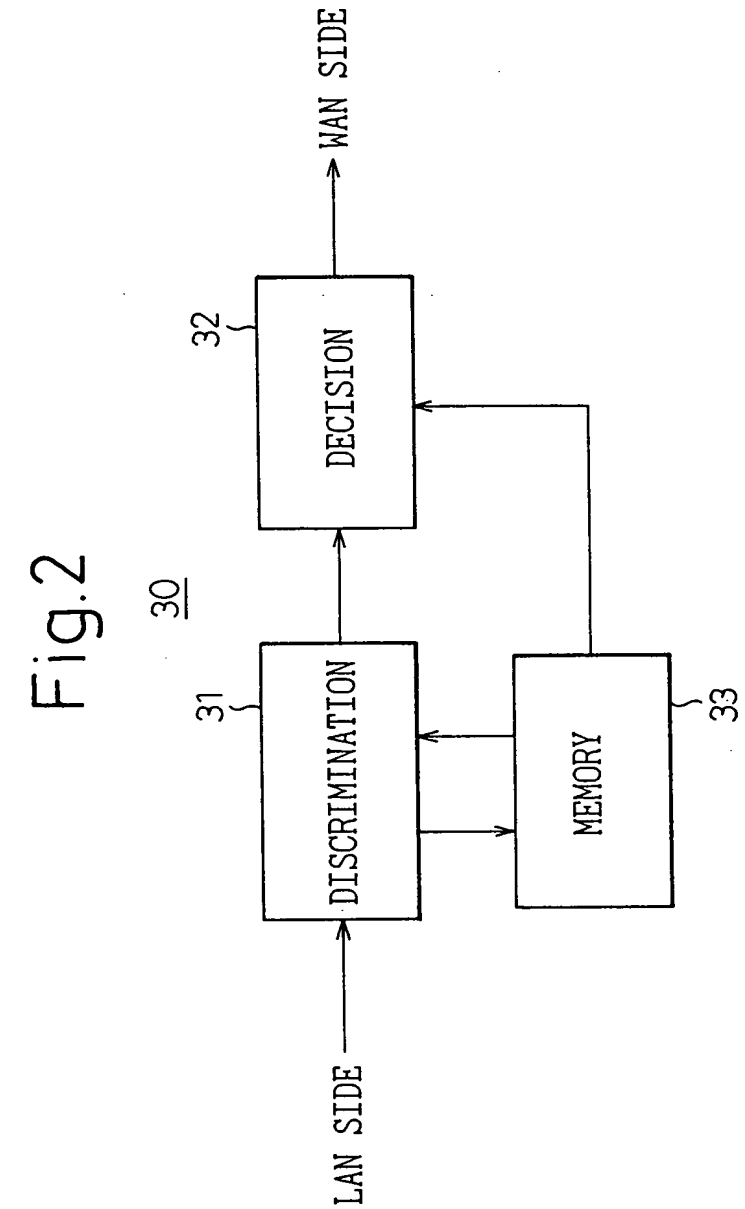

30
31
DISCRIMINATION
32
DECISION
33
MEMORY
LAN SIDE
WAN SIDE

Fig.3

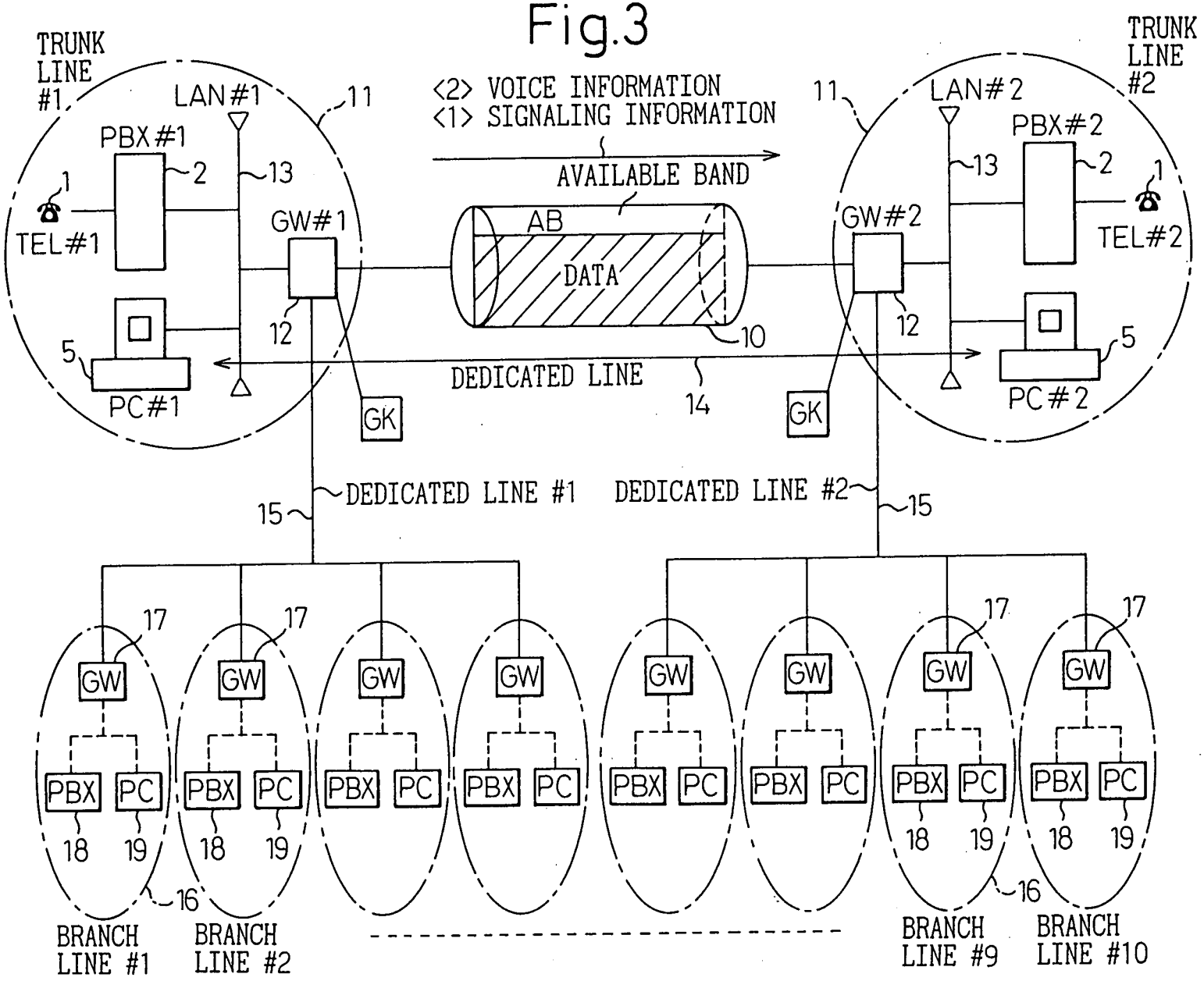

TRUNK LINE #1
LAN#1
11
PBX#1
1
2
13
TEL#1
GW#1
AB
DATA
12
10
5
PC#1
GK
<2> VOICE INFORMATION
<1> SIGNALING INFORMATION
AVAILABLE BAND
DEDICATED LINE
14
11
LAN#2
TRUNK LINE #2
PBX#2
13
2
1
TEL#2
GW#2
12
5
PC#2
GK
15
DEDICATED LINE #1
DEDICATED LINE #2
15
17
GW
PBX
PC
18
19
16
BRANCH LINE #1
BRANCH LINE #2
BRANCH LINE #9
BRANCH LINE #10

Fig.4

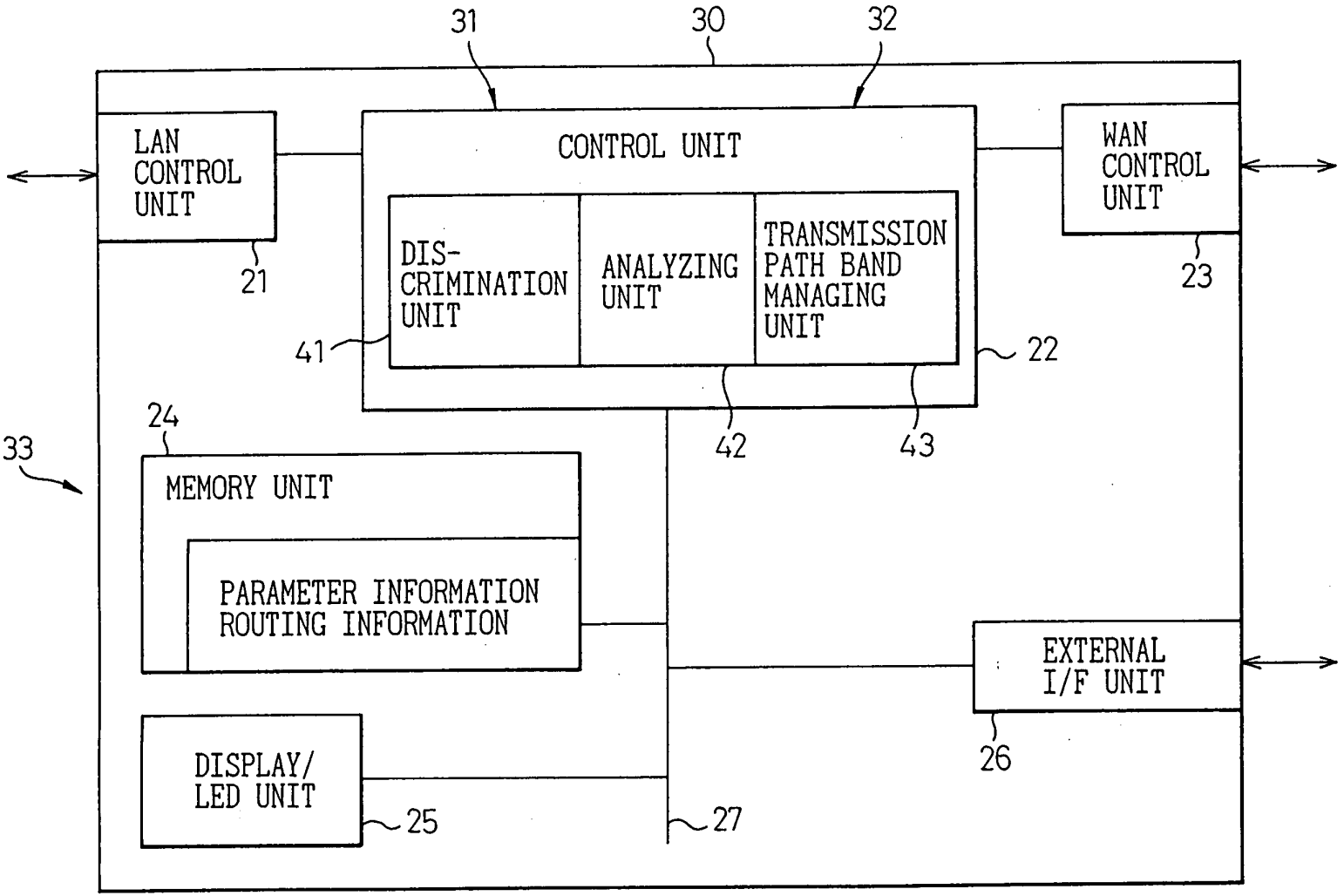

31
30
32
LAN CONTROL UNIT
21
CONTROL UNIT
DIS-CRIMINATION UNIT
ANALYZING UNIT
TRANSMISSION PATH BAND MANAGING UNIT
41
22
42
43
WAN CONTROL UNIT
23
24
33
MEMORY UNIT
PARAMETER INFORMATION
ROUTING INFORMATION
EXTERNAL I/F UNIT
26
DISPLAY/ LED UNIT
25
27

Fig.5

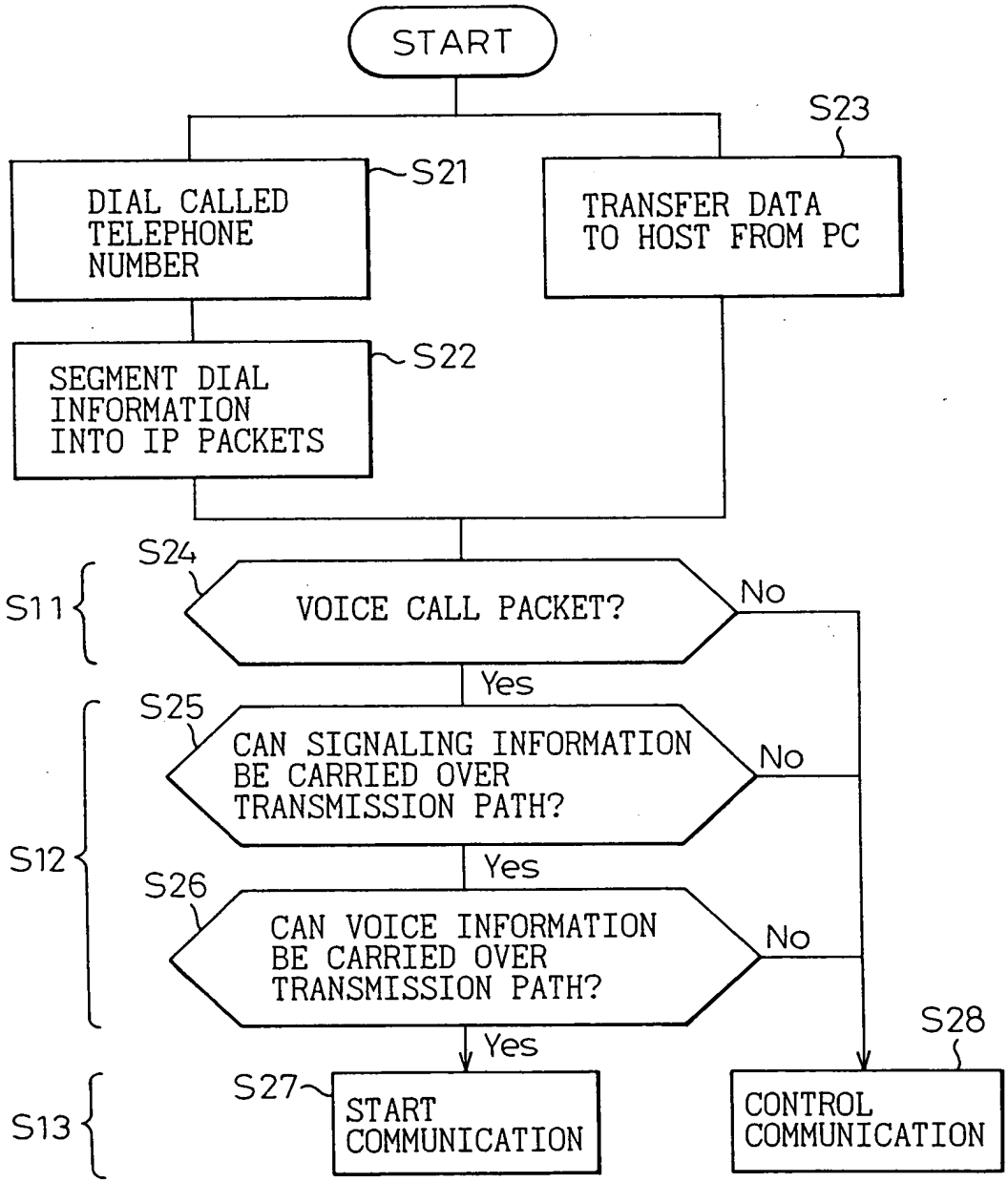

START
S21
DIAL CALLED TELEPHONE NUMBER
S22
SEGMENT DIAL INFORMATION INTO IP PACKETS
S23
TRANSFER DATA TO HOST FROM PC
S11
S24
VOICE CALL PACKET?
No
Yes
S12
S25
CAN SIGNALING INFORMATION BE CARRIED OVER TRANSMISSION PATH?
No
Yes
S26
CAN VOICE INFORMATION BE CARRIED OVER TRANSMISSION PATH?
No
Yes
S13
S27
START COMMUNICATION
S28
CONTROL COMMUNICATION

Fig.6

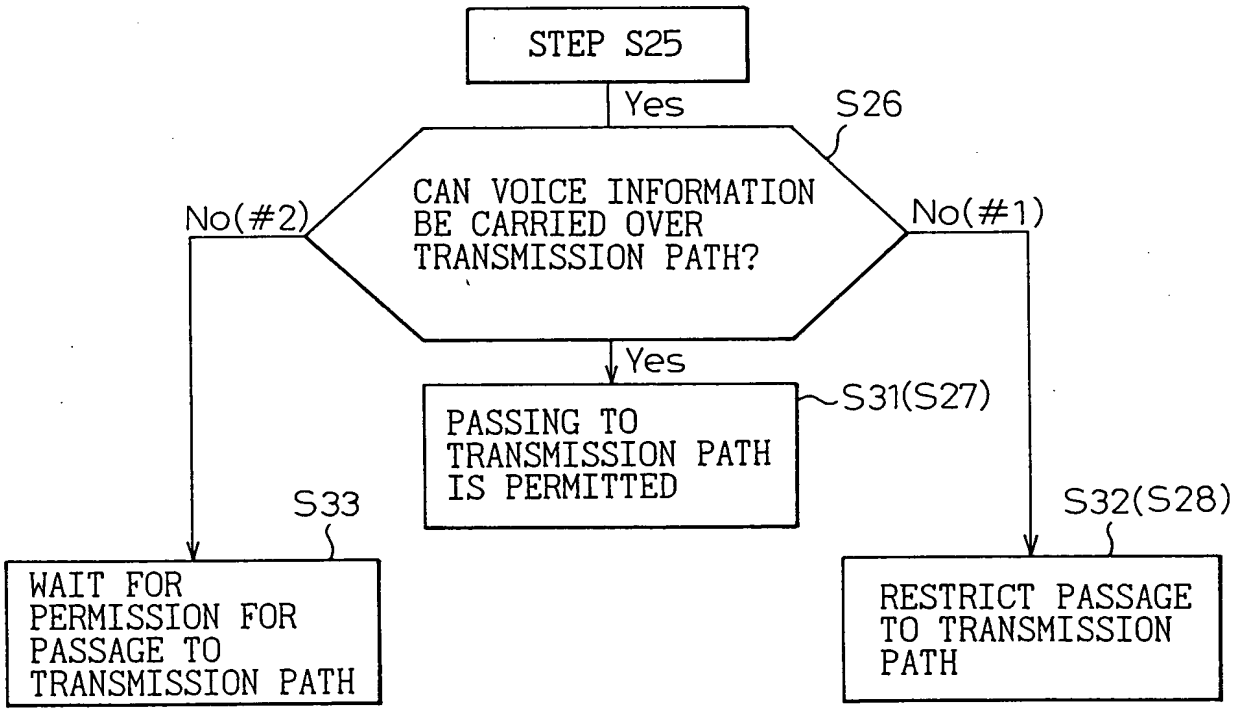

STEP S25
Yes
S26
CAN VOICE INFORMATION BE CARRIED OVER TRANSMISSION PATH?
No(#2)
No(#1)
Yes
S31(S27)
PASSING TO TRANSMISSION PATH IS PERMITTED
S33
S32(S28)
WAIT FOR PERMISSION FOR PASSAGE TO TRANSMISSION PATH
RESTRICT PASSAGE TO TRANSMISSION PATH

Fig.7

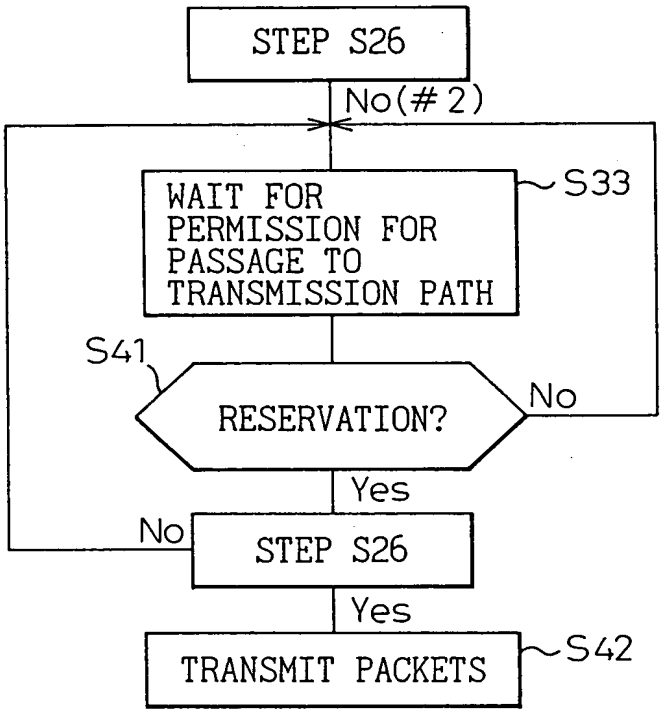

STEP S26
No(# 2)
WAIT FOR PERMISSION FOR PASSAGE TO TRANSMISSION PATH
S33
S41
RESERVATION?
No
Yes
No
STEP S26
Yes
TRANSMIT PACKETS
S42

Fig.8

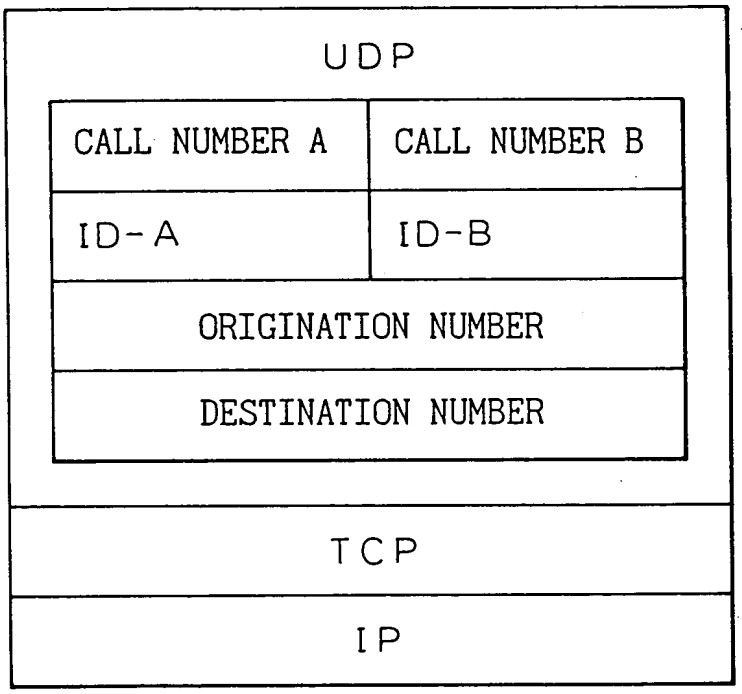

UDP
CALL NUMBER A
CALL NUMBER B
ID-A
ID-B
ORIGINATION NUMBER
DESTINATION NUMBER
TCP
IP

Fig.9

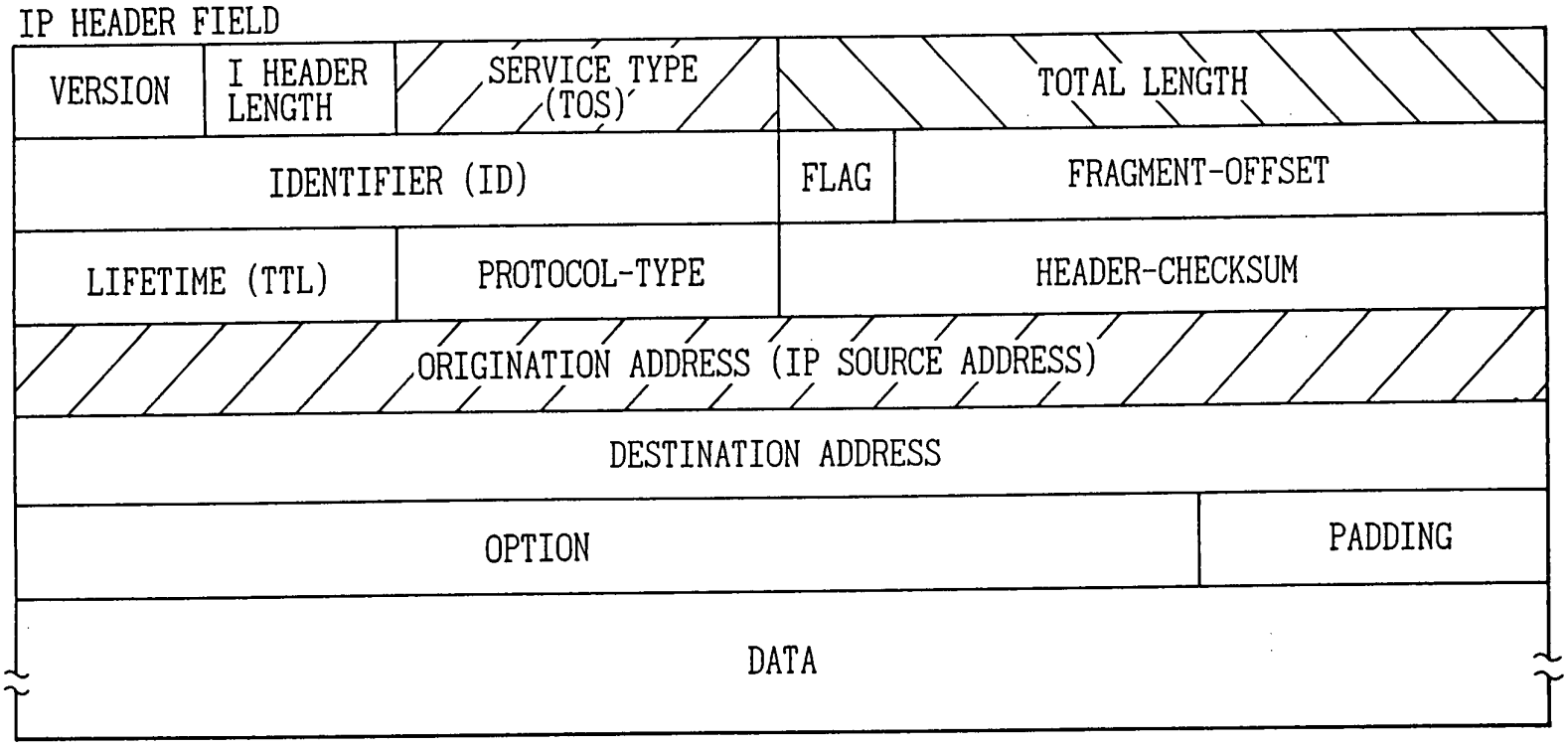

IP HEADER FIELD
VERSION
I HEADER LENGTH
SERVICE TYPE (TOS)
TOTAL LENGTH
IDENTIFIER (ID)
FLAG
FRAGMENT-OFFSET
LIFETIME (TTL)
PROTOCOL-TYPE
HEADER-CHECKSUM
ORIGINATION ADDRESS (IP SOURCE ADDRESS)
DESTINATION ADDRESS
OPTION
PADDING
DATA

Fig.10

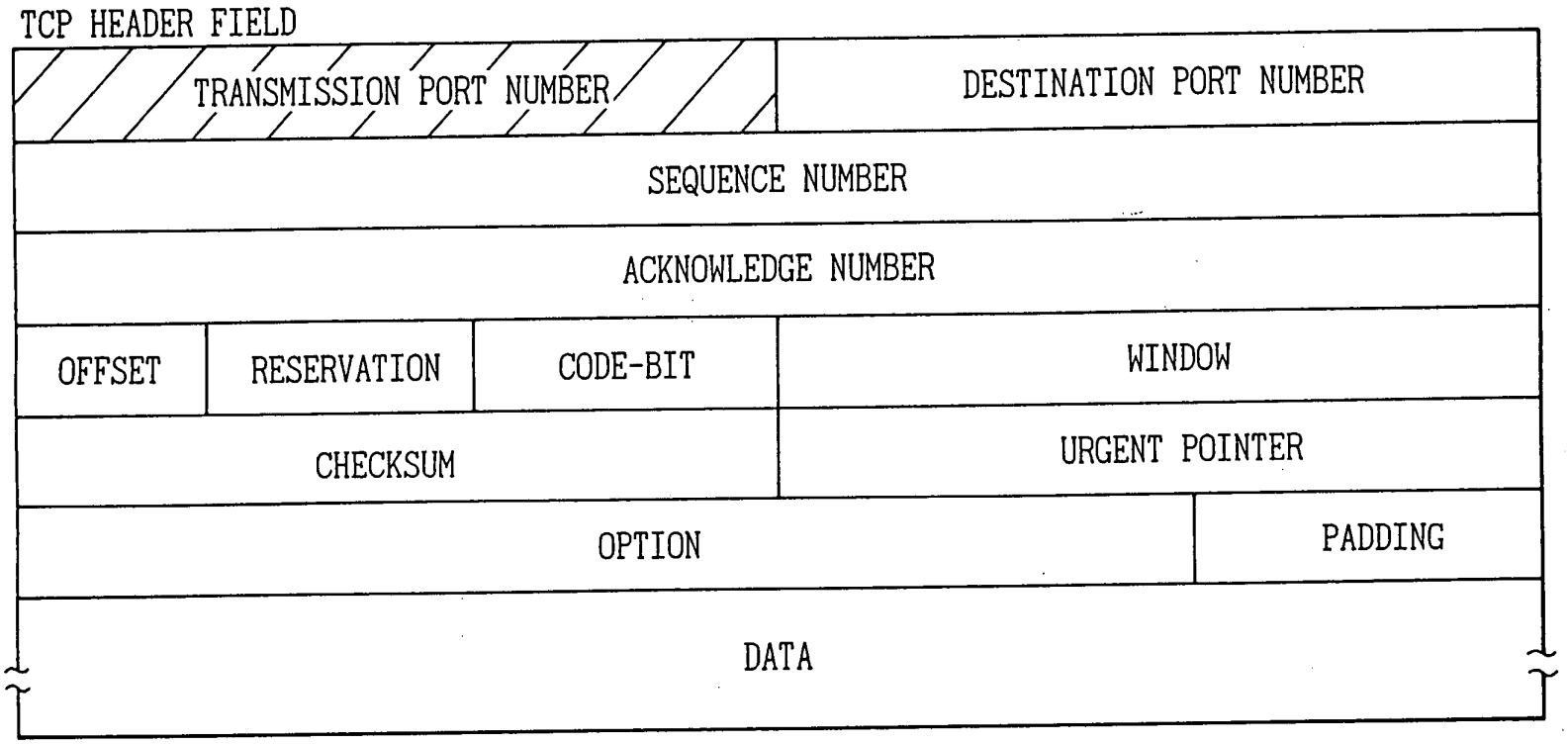

TCP HEADER FIELD
TRANSMISSION PORT NUMBER
DESTINATION PORT NUMBER
SEQUENCE NUMBER
ACKNOWLEDGE NUMBER
OFFSET
RESERVATION
CODE-BIT
WINDOW
CHECKSUM
URGENT POINTER
OPTION
PADDING
DATA

Fig.11

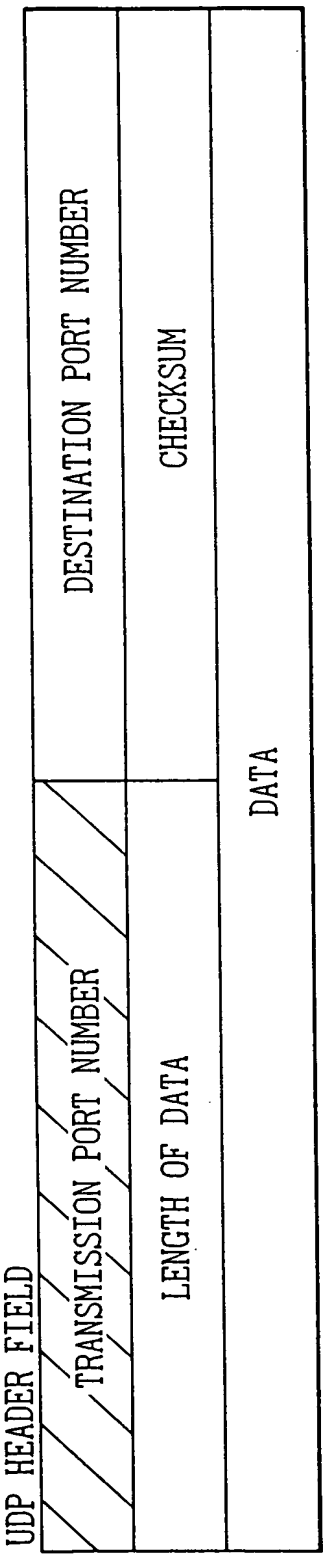

UDP HEADER FIELD
TRANSMISSION PORT NUMBER
DESTINATION PORT NUMBER
LENGTH OF DATA
CHECKSUM
DATA

Fig.12

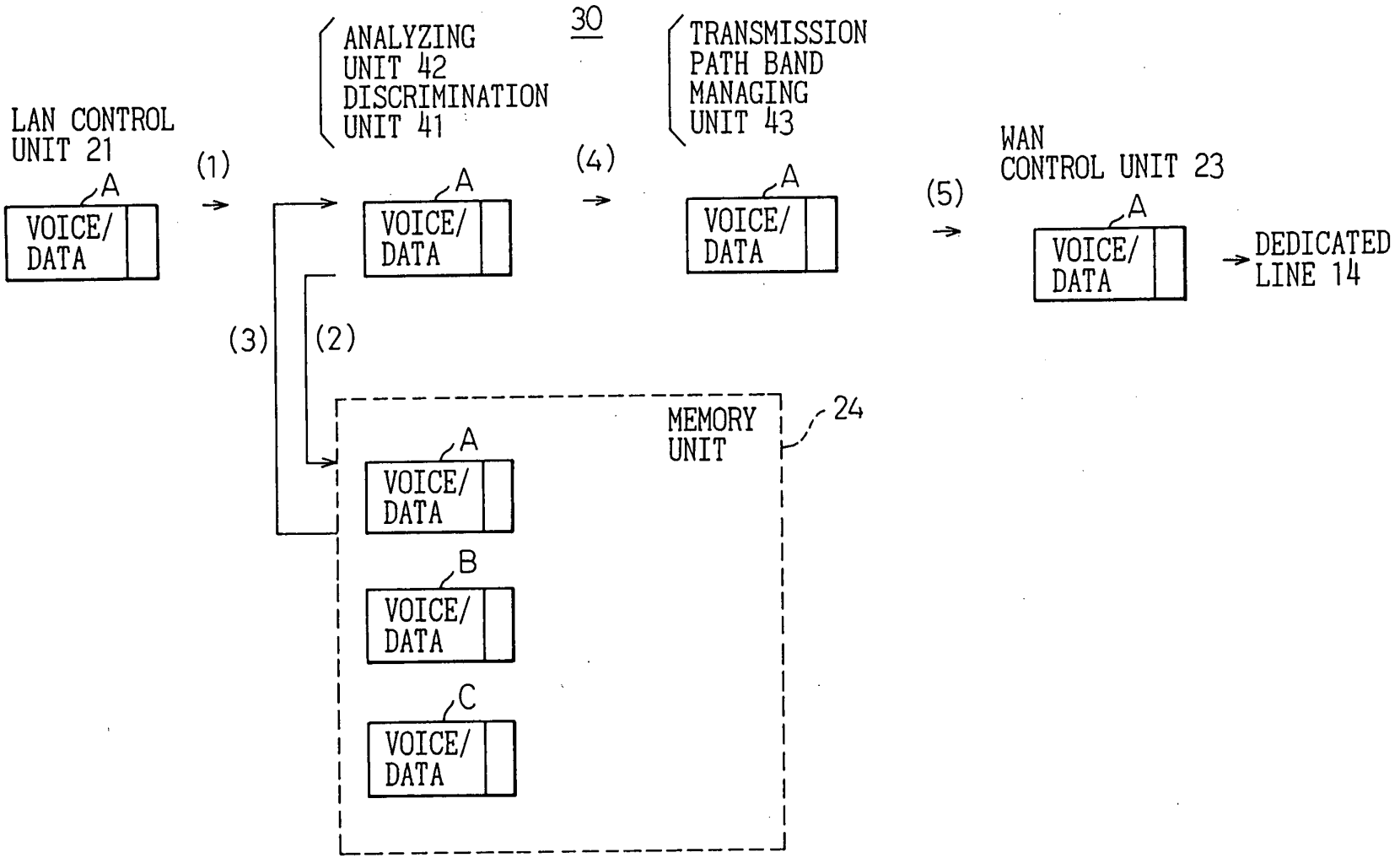
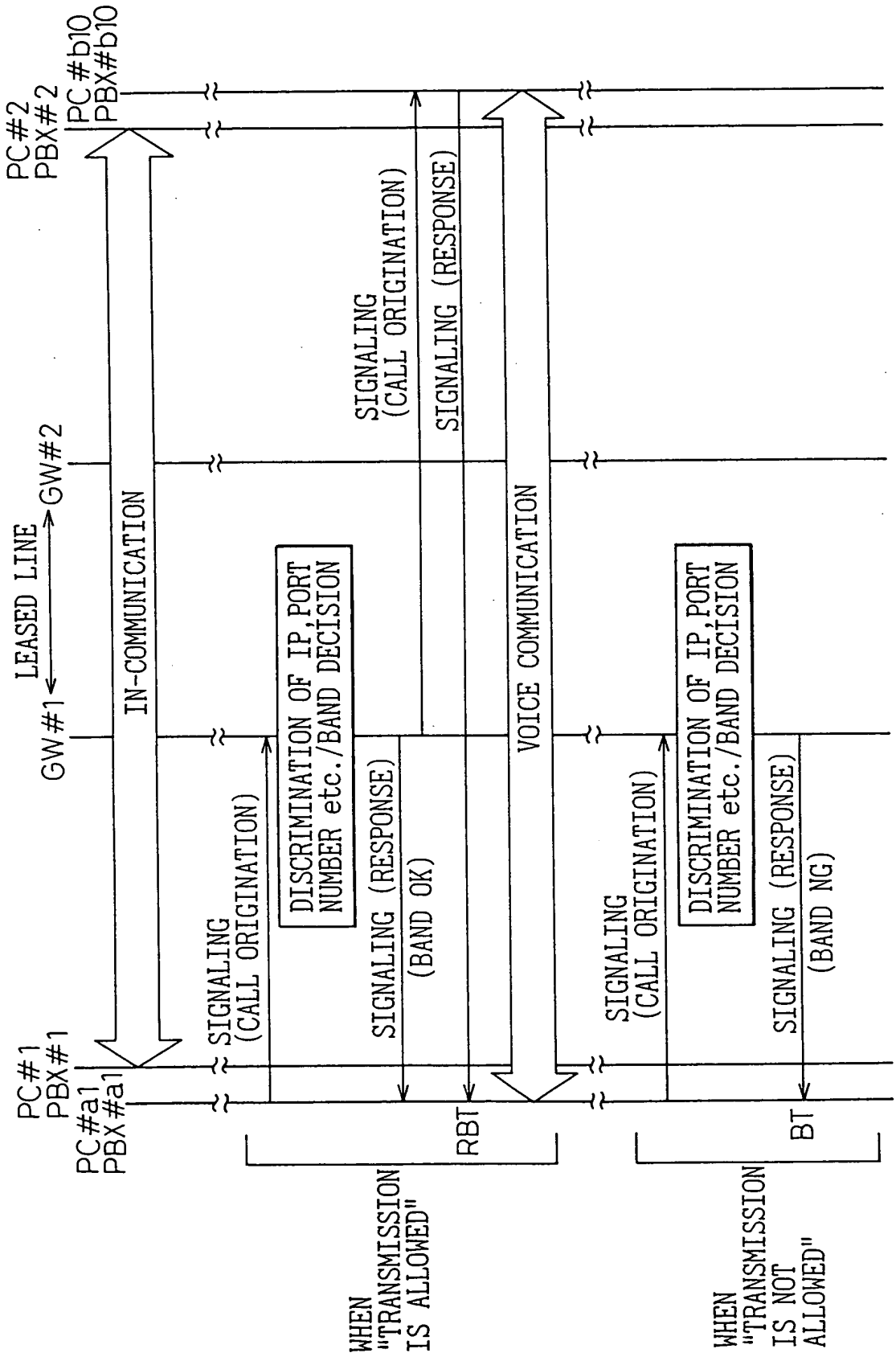

LAN CONTROL UNIT 21
A
VOICE/ DATA
(1)
ANALYZING UNIT 42
DISCRIMINATION UNIT 41
30
A
VOICE/ DATA
(4)
TRANSMISSION PATH BAND MANAGING UNIT 43
A
VOICE/ DATA
(5)
WAN CONTROL UNIT 23
A
VOICE/ DATA
DEDICATED LINE 14
(3)
(2)
MEMORY UNIT
24
A
VOICE/ DATA
B
VOICE/ DATA
C
VOICE/ DATA

Fig.13


PC#1
PBX#a1
PC#a1
PBX#a1
GW#1
LEASED LINE
GW#2
PC#2
PBX#2
PC#b10
PBX#b10
IN-COMMUNICATION
SIGNALING
(CALL ORIGINATION)
DISCRIMINATION OF IP,PORT
NUMBER etc./BAND DECISION
SIGNALING (RESPONSE)
(BAND OK)
SIGNALING
(CALL ORIGINATION)
SIGNALING (RESPONSE)
VOICE COMMUNICATION
RBT
WHEN
"TRANSMISSION
IS ALLOWED"
SIGNALING
(CALL ORIGINATION)
DISCRIMINATION OF IP,PORT
NUMBER etc./BAND DECISION
SIGNALING (RESPONSE)
(BAND NG)
BT
WHEN
"TRANSMISSION
IS NOT
ALLOWED"

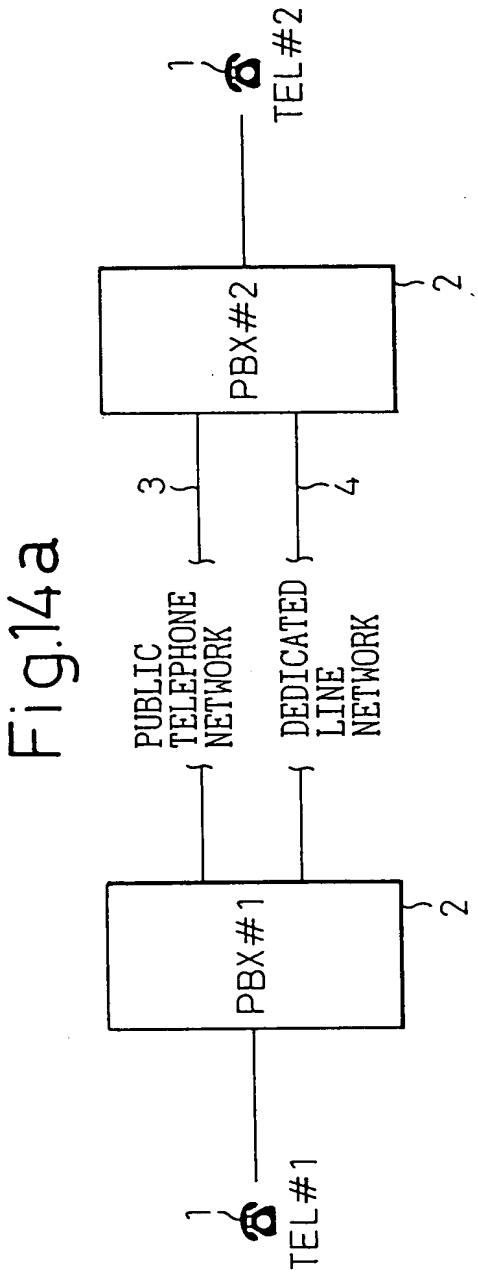


Fig.14a

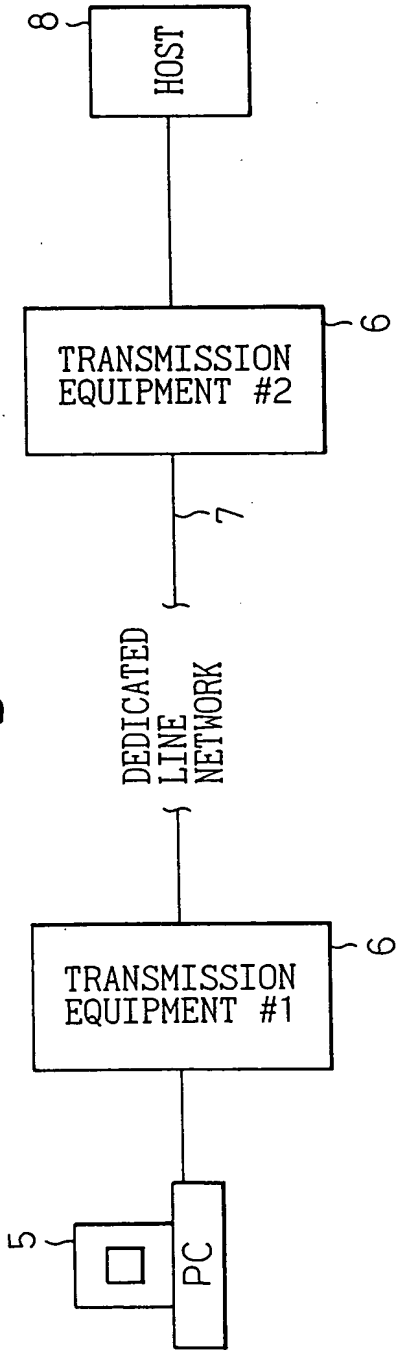


Fig.14b

Fig.15

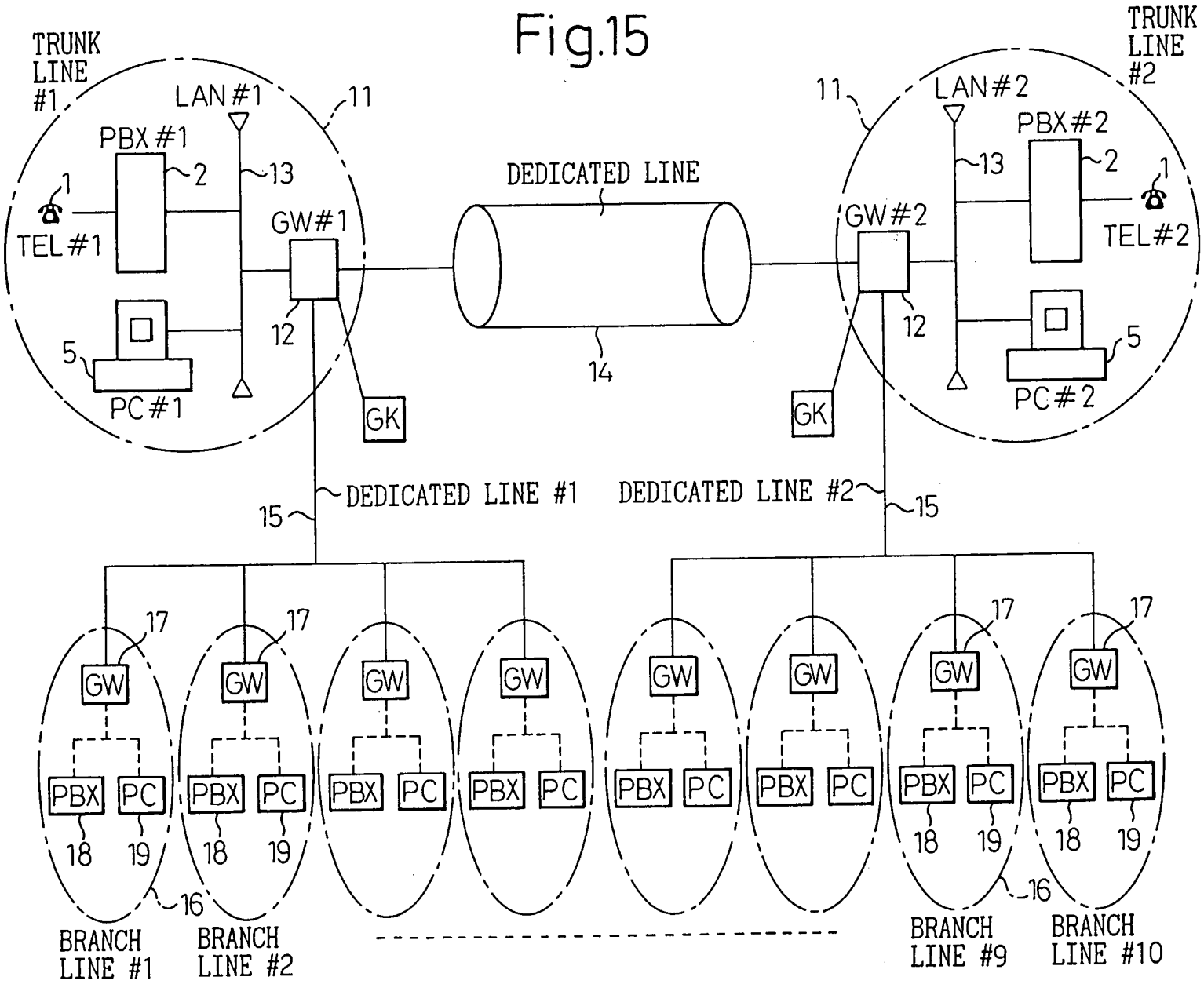
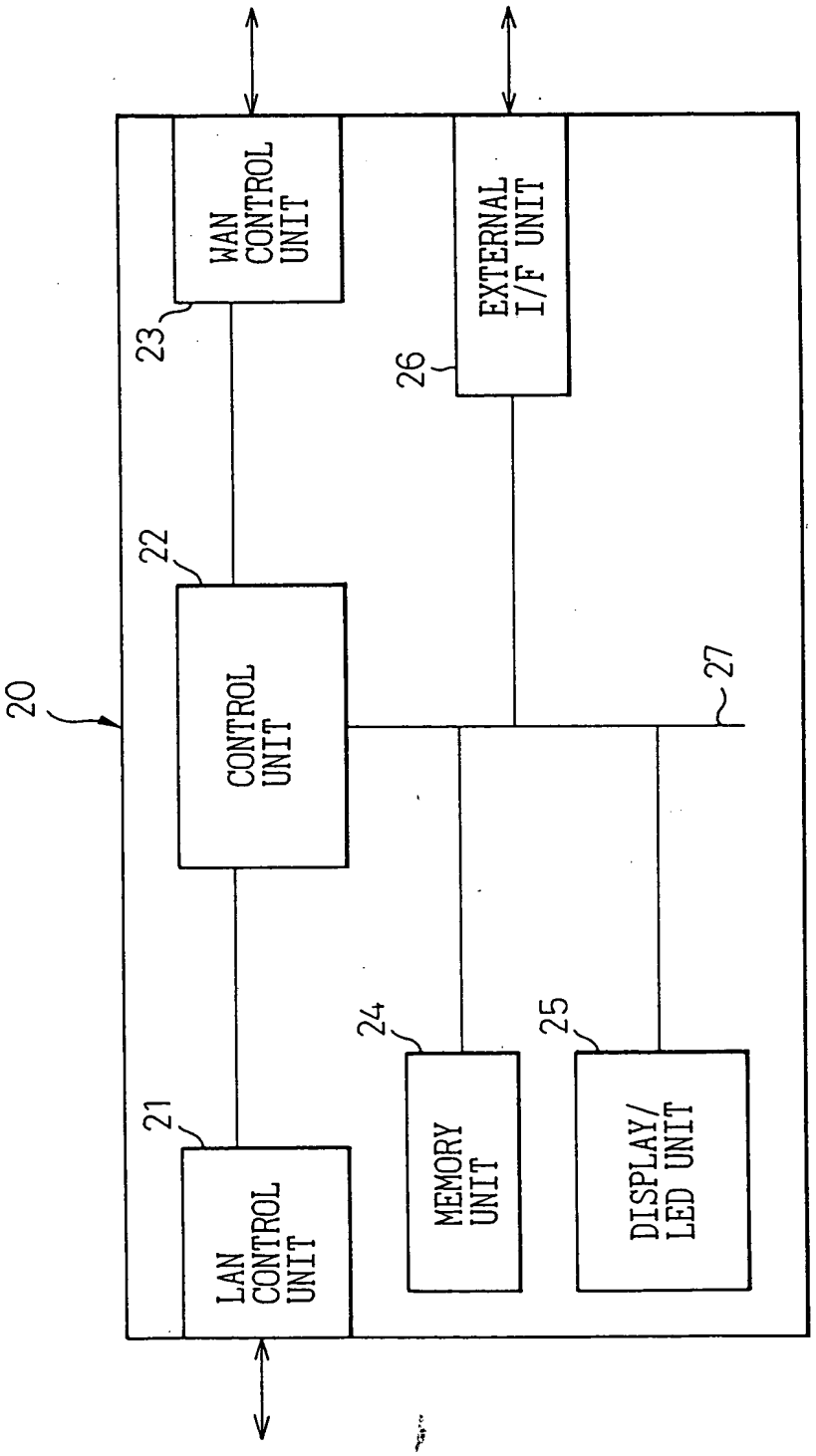

TRUNK LINE #1
LAN#1
11
PBX#1
2
13
1
TEL#1
GW#1
12
5
PC#1
GK
DEDICATED LINE
14
TRUNK LINE #2
11
LAN#2
PBX#2
13
2
1
TEL#2
GW#2
12
5
PC#2
GK
15
DEDICATED LINE #1
DEDICATED LINE #2
15
17
GW
PBX
PC
18
19
16
BRANCH LINE #1
BRANCH LINE #2
BRANCH LINE #9
BRANCH LINE #10

Fig.16


20
WAN CONTROL UNIT
23
EXTERNAL I/F UNIT
26
22
CONTROL UNIT
27
21
LAN CONTROL UNIT
24
MEMORY UNIT
25
DISPLAY/ LED UNIT